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Why the Birth of Autonomous Driving Is the Death of our “Right” to Drive

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Why the Birth of Autonomous Driving Is the Death of our “Right” to Drive

Christopher B. Emch*

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I. Introduction

The last decade brought the two most significant developments in car technology since the invention of the car itself. The first was the replacement of the gasoline engine with electric motors and batteries, which is steadily gaining acceptance with mainstream car buyers. The second was the replacement of the human driver with a complex system of sensors and computer software in the form of the autonomous car. While fully autonomous cars are not yet available for purchase, it is only a matter of time before they join electric vehicles in showrooms across the country. Automakers and technology companies have poured billions of dollars into bringing this technology across the finish line; they test prototype autonomous vehicles on public roads daily, thanks in no small part to the efforts of federal and state regulators to remove legal barriers to autonomous vehicle development. Meanwhile, semiautonomous cars, which use much of the same technology to automatically steer, accelerate, brake, and park themselves in certain conditions, are already legion on the nation's highways. Mass-market, fully autonomous vehicles will almost certainly be a reality by the end of the present decade.

The legal discussion surrounding autonomous vehicles currently centers on questions of how to regulate their deployment or apportion liability in the event of a collision, as well as the provocative ethical dilemma of how a self-driving car should decide who to kill when it can avoid hitting, for example, a small child or an oncoming pickup truck, but not both—the twenty-first century Trolley Problem.¹ However, the advent of autonomous cars raises another question: once we have them, should we still be allowed to drive? For Elon Musk, founder and CEO of Tesla, the car company leading the push toward mass-market electrification and autonomy, the answer is an

¹ SAMUEL I. SCHWARTZ, NO ONE AT THE WHEEL: DRIVERLESS CARS AND THE ROAD OF THE FUTURE 167–69 (2018).

unequivocal “no.” In 2015, Musk said it is simply “too dangerous” to have “a person driving a two-ton death machine.”² If our legislatures or federal regulatory authorities someday come to the same conclusion, will this country’s more than 200 million licensed drivers³ be forced to abandon that most American rite of passage and let go of the wheel?

This Comment argues that a statutory or regulatory ban on human driving will survive challenge under the U.S. Constitution. Part II provides an overview of the state of autonomous vehicle development in the United States and the reasons why autonomous vehicles are arguably preferable to human drivers. Part III establishes why, up to now, American courts have recognized a constitutionally protected, fundamental right to interstate travel, but not a fundamental right to drive. Part IV explores the current legal bases for either a state or federal ban on human driving. Part V predicts the course of events that will culminate in the human driving ban and addresses why judicial recognition of the right to drive is even more unlikely in the era of autonomous vehicles.

II. We Are the Problem

It was only forty years after Karl Benz invented the automobile in 1885⁴ that his contemporaries began trying to replace the human driver with a machine. In July of 1925, businessman Francis Houdina⁵ decided to promote his radio

² Josh Lowensohn, *Elon Musk: Cars You Can Drive Will Eventually Be Outlawed*, VERGE (Mar. 17, 2015 2:40 PM), <https://www.theverge.com/transportation/2015/3/17/8232187/elon-musk-human-drivers-are-dangerous>.

³ Office of Highway Policy Info., *Table DL-201 Licensed Drivers, By State, 1949-2018*, U.S. DEP’T TRANSP. FED. HIGHWAY ADMIN. (Feb. 28, 2020), <https://www.fhwa.dot.gov/policyinformation/statistics/2018/pdf/dl201.pdf>.

⁴ 1885–1886. *The First Automobile*, DAIMLER, <https://www.daimler.com/company/tradition/company-history/1885-1886.html> (last visited Apr. 29, 2020).

⁵ Not to be confused with Harry Houdini, the famous illusionist and escape artist, whose mail was often delivered to Houdina by mistake. This infuriated Houdini, so much so that one day he broke into Houdina’s office and destroyed it. See Carl Engelking, *The ‘Driverless’ Car Era Began more than 90 Years Ago*, DISCOVER (Dec. 13, 2017, 11:22 AM), <https://www.discovermagazine.com/technology/the-driverless-car-era-began-more-than-90-years-ago>; Ryan Felton, *The Man Who Tested the First Driverless Car in 1925 Had a Bizarre Feud with Harry Houdini*, JALOPNIK

equipment company by installing remote controls in a 1926 Chandler sedan, which he christened the “American Wonder.”⁶ Houdina clung to the Chandler’s running board while his partner remotely operated the car from a trailing vehicle, and for a few terrifying moments, the American Wonder bobbed and weaved down the streets of New York City with no one in the driver’s seat “as if a phantom hand were at the wheel.”⁷ The stunt was interrupted when the steering apparatus failed and the Chandler crashed into the fender of a car filled with cameramen.⁸ Spectators had just witnessed the first journey—and crash—of a “driverless” car in automotive history.

Today, Houdina’s publicity stunt seems primitive and reckless, but future generations may view our current handling of autonomous driving technology in a similar light. Autonomous vehicle development in the United States is taking place on two, parallel paths. In one arena, the research-and-development arms of automakers, as well as Silicon Valley technology developers such as Uber and Waymo, are testing fully autonomous vehicles on public roads.⁹ In the other, automakers’ conventional sales-and-marketing arms are pushing semiautomated driving technology, such as Tesla’s Autopilot, on consumers in production vehicles.¹⁰ Both forms of testing and deploying autonomous vehicle technology have had deadly consequences, and both illustrate the significant challenges that arise when human operators are asked to share

(Feb. 14, 2017, 1:27 PM), <https://jalopnik.com/the-man-who-tested-the-first-driverless-car-in-1925-had-1792312207>.

⁶ Engelking, *supra* note 5; Felton, *supra* note 5.

⁷ Felton, *supra* note 5 (quoting *Radio-Driven Auto Runs Down Escort*, N.Y. TIMES, July 28, 1925, at 28).

⁸ *Id.*

⁹ See, e.g., Roberto Baldwin, *Waymo Reveals Details on 5th-Gen Self-Driving Jaguar I-Pace*, CAR & DRIVER (Mar. 5, 2020), <https://www.caranddriver.com/news/a31228617/waymo-jaguar-ipace-self-driving-details/> (“While self-driving cars are still years away, the evolution of the systems that are testing on public roads is of vital importance.”); Munsif Vengattil & Neha Malara, *Uber Gets Permit to Restart Testing its Self-Driving Cars in California*, REUTERS (Feb. 5, 2020 2:27 PM), <https://www.reuters.com/article/us-uber-self-driving/uber-gets-permit-to-restart-testing-its-self-driving-cars-in-california-idUSKBN1ZZ2QG>. Uber temporarily suspended its autonomous vehicle testing program after a fatal accident in March of 2018. *Id.*; see *infra* Section II.A.

¹⁰ See *infra* Section II.B.

driving responsibilities with machines.¹¹ In large part, fatalities involving self-driving cars have occurred not due to the failure of autonomous driving technology to operate as designed, but rather the failure of human beings to respect and acknowledge that technology's known limitations. These incidents comprise a small fraction of the estimated ninety-four percent of U.S. car crashes caused by human error.¹² It is for this reason that when autonomous driving is viable on a mass scale, legislators and federal regulators may see fit to eliminate human drivers from public roads in the interest of public safety.

A. Death of Elaine Herzberg

The first known fatality involving a prototype autonomous vehicle occurred on March 18, 2018, in the Phoenix suburb of Tempe, Arizona.¹³ A 2017 Volvo XC90 sport-utility vehicle, modified and operated by Uber's autonomous vehicle division, struck and killed a pedestrian, Elaine Herzberg, at approximately forty miles per hour as she was walking her bicycle across the road at night.¹⁴ The National Transportation Safety Board ("NTSB"), which investigated the crash, determined that the Volvo struck Herzberg because Uber's test operator, Rafaela Vasquez, was distracted by her smartphone and not watching the road.¹⁵

¹¹ See *infra* Sections II.A, II.B.

¹² U.S. DEP'T OF TRANS. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 812 115, CRITICAL REASONS FOR CRASHES INVESTIGATED IN THE NATIONAL MOTOR VEHICLE CRASH CAUSATION SURVEY 1 (2015), <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812115>; *Self-Driving Coalition Statement on NHTSA's 2017 Fatal Traffic Crash Report*, SELF-DRIVING COALITION FOR SAFER STREETS (Oct. 3, 2018), <https://www.selfdrivingcoalition.org/newsroom/press-releases/self-driving-coalition-statement-on-nhtsas-2017-fatal-traffic-crash-report> [hereinafter *Self-Driving Coalition Statement*].

¹³ See generally NAT'L TRANSP. SAFETY BD., NTSB/HAR-19/03, PB2019-101402, COLLISION BETWEEN VEHICLE CONTROLLED BY DEVELOPMENTAL AUTOMATED DRIVING SYSTEM AND PEDESTRIAN, TEMPE, ARIZONA, MARCH 18, 2018 (2019) [hereinafter *UBER NTSB FINAL REPORT*], <https://www.nts.gov/investigations/AccidentReports/Reports/HAR1903.pdf>.

¹⁴ *Id.* at v.

¹⁵ *Id.* ("[T]he probable cause of the crash in Tempe, Arizona, was the failure of the vehicle operator to monitor the driving environment and the operation of the automated driving system because she was visually distracted throughout the trip by her personal cell phone.").

To reduce the potential for false alarms, Uber had programmed its automated driving system so that it would not perform sudden, emergency stops; if an emergency required hard braking beyond a certain threshold, the test operator had to intervene.¹⁶ Vasquez had been trained on the system's operation.¹⁷ On the night of the crash, the system detected Herzberg walking into the road nearly six seconds before impact; when the system determined a collision was imminent, it did not activate the brakes because heavy braking was required to avoid hitting her.¹⁸ Meanwhile, Vasquez was watching *The Voice* on Hulu,¹⁹ so she noticed Herzberg only one second before impact and did not react in time.²⁰ Police estimated that had Vasquez been watching the road, she could have stopped the Volvo with more than two car lengths to spare.²¹

After conducting their own investigation, local authorities determined Uber was not criminally liable in the crash, but left open the possibility that Vasquez would be charged

¹⁶ *Id.* at 13–14. “An emergency was defined as a situation requiring braking at a deceleration greater than 7 meters per second squared (m/s²) (0.71 g) or rate of deceleration (jerk) greater than ±5 meters per second cubed (m/s³) to prevent a collision.” *Id.* at 13. Put simply, the system was allowed to brake automatically with up to 0.71 g of force. *Id.* If the system detected a hazard that required braking beyond that limit, it gave the operator one second to respond. *Id.* at 13–14. If, after one second, the operator did not respond, the system would brake automatically only if it could *avoid* a collision by applying up to 0.71 g of braking force. *Id.* at 14. Where more than 0.71 g of braking force was required to avoid a collision, the system would begin a “gradual vehicle slowdown” but would not brake up to the limit, even though doing so would mitigate the force of the impact. *Id.* For this reason, “[t]he primary countermeasure in an emergency situation was the vehicle operator, who was expected to recognize the hazard, to take control of the vehicle, and to intervene appropriately.” *Id.*

¹⁷ *Id.* at 28–29.

¹⁸ *Id.* at 40.

¹⁹ Associated Press, *Uber Autonomous-SUV Driver Streamed ‘The Voice’ Just before Deadly Arizona Crash, Report Says*, L.A. TIMES (June 22, 2018 11:30 AM), <http://www.latimes.com/business/autos/la-fi-hy-uber-self-driving-death-20180622-story.html>. A local police report, and not the NTSB report, specified the television program and streaming service. *Id.*

²⁰ UBER NTSB FINAL REPORT, *supra* note 13, at 1–2.

²¹ See Associated Press, *supra* note 19 (“[O]fficers calculated that had Vasquez been paying attention, she could have reacted 143 feet before impact and brought the SUV to a stop about 42.6 feet before hitting Herzberg.”); *Used 2017 Volvo XC90 SUV Features & Specs*, EDMUNDS, <https://www.edmunds.com/volvo/xc90/2017/suv/features-specs/> (last visited Apr. 29, 2020) (stating that the 2017 Volvo XC90 has a length of 194.9 inches, which is approximately 16.2 feet).

individually²²; at the time of writing, no such charges have been reported.²³ Whether Vasquez should bear full responsibility for the crash is up for some debate. For example, the NTSB concluded in its final report that Uber should have programmed its automated driving system to brake automatically in emergencies even when braking would only mitigate (and not prevent) a collision.²⁴ The report also revealed that Herzberg had methamphetamine in her system at the time of the crash, which may have led her to cross the road when it was unsafe to do so.²⁵ What seems beyond debate is that had Vasquez been watching the road as required, “she would likely have had sufficient time to detect and react to the crossing pedestrian to avoid the crash or mitigate the impact.”²⁶

B. Deaths Involving Tesla Autopilot

Thankfully, but no less tragically, Herzberg’s death remains the only reported fatality involving a prototype autonomous vehicle in the United States. However, a mounting number of deaths attributed to Tesla’s semiautomated driving system, Autopilot, have captured national headlines and drawn the ire of the NTSB.²⁷ Autopilot is a suite of “driver assistance” features (to

²² Uriel J. Garcia, *No Criminal Charges for Uber in Tempe Death; Police Asked to Further Investigate Operator*, AZCENTRAL (Mar. 6, 2019 10:52 AM), <https://www.azcentral.com/story/news/local/tempe/2019/03/05/no-criminal-charges-uber-fatal-tempe-crash-tempe-police-further-investigate-driver/3071369002/>.

²³ As part of its ongoing investigation, the Tempe Police Department had a technical expert conduct a lighting study at the crash site in July of 2019. Ray Stern, *Exclusive: Road Lighting Was Ideal at Site of Fatal Uber Self-Driving Crash*, PHOENIX NEW TIMES (Nov. 21, 2019 10:05 AM), <https://www.phoenixnewtimes.com/news/uber-self-driving-tempe-crash-lighting-video-driver-rafaela-vasquez-11394567>. The expert’s report, which refers to the project as “State of Arizona v Rafaela Vasquez,” concludes that the street lamp illumination was so bright on the night of the crash that “had she been paying attention, Ms. Vasquez could have seen Ms. Herzberg starting across the road when the car was a little over 800 feet from the point of impact.” James S. Sobek, *Summary of Analysis*, WOLF TECH. SERVS., INC. 1, 2 (2019), https://images.phoenixnewtimes.com/media/pdf/wolf_lighting_report.pdf.

²⁴ UBER NTSB FINAL REPORT, *supra* note 13, at 40.

²⁵ *Id.* at 36.

²⁶ *Id.* at 43.

²⁷ See, e.g., Tom Krisher, *3 Crashes, 3 Deaths Raise Questions about Tesla’s Autopilot*, ASSOCIATED PRESS (Jan. 3, 2020), <https://apnews.com/ca5e62255bb87bf1b151f9bf075aaadf> (“In addition to the

use industry parlance) that allow Tesla models to perform some driving tasks under the right conditions.²⁸ A combination of radar sensors, ultrasonic sensors, and cameras monitor the vehicle's driving environment and allow it to stay centered in its lane, keep a safe distance from vehicles ahead, and even execute lane changes with minimal input from the driver.²⁹ Tesla is not alone in offering this technology to consumers; competing systems from luxury brands such as Cadillac, Infiniti, and Volvo perform similar functions.³⁰ Tesla is also not the first to conceive of these features; adaptive cruise control, lane-keeping aids, and automatic emergency braking systems predate Autopilot by many years and rely on the same technology.³¹ What Tesla has done with Autopilot is integrate these features in a cohesive, sexy-sounding package that aims to give Tesla customers a taste of the future, in line with Elon Musk's well-cultivated "Real-Life Tony Stark" image.³²

That taste of the future has turned into a lethal overdose. Since Tesla introduced Autopilot, several people have died because they used the system as though it were capable of fully autonomous driving, which it is not. Autopilot and competing

deaths on Sunday night, three U.S. fatal crashes since 2016—two in Florida and one in Silicon Valley—involved vehicles using Autopilot.”); Brad Templeton, *NTSB Report on Tesla Autopilot Fatality Comes Down Hard on Tesla, Driver Monitoring and Distraction*, FORBES (Feb. 26, 2020 8:00 AM), <https://www.forbes.com/sites/bradtempleton/2020/02/26/ntsb-report-on-tesla-autopilot-fatality-comes-down-hard-on-driver-monitoring-distraction/#6f01b6d87e75>.

²⁸ *Autopilot and Full Self-Driving Capability*, TESLA, <https://www.tesla.com/support/autopilot> (last visited Apr. 29, 2020).

²⁹ *Id.*; see also TESLA, MODEL 3 OWNER'S MANUAL 84 (2020.4 N. Am. ed. 2020).

³⁰ See, e.g., Patrick Olsen, *Cadillac Tops Tesla in Consumer Reports' First Ranking of Automated Driving Systems*, CONSUMER REPORTS (Oct. 4, 2018), <https://www.consumerreports.org/autonomous-driving/cadillac-tops-tesla-in-automated-systems-ranking/> (ranking semiautomated driving systems from Cadillac, Infiniti, Tesla, and Volvo).

³¹ See *Automated Vehicles for Safety*, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., <https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety> (last visited Apr. 29, 2020).

³² See, e.g., Connor Simpson, *Everyone Wants Elon Musk to Be Tony Stark*, ATLANTIC (Aug. 24, 2013), <https://www.theatlantic.com/technology/archive/2013/08/everyone-wants-elon-musk-be-real-life-tony-stark/311814/> (positing that Musk and the fictitious *Iron Man* character, Tony Stark, have become “so intertwined Musk may start drawing cease-and-desist letters from Marvel”).

“Level 2”³³ systems lack the more sophisticated hardware and software required to provide the same level of driving autonomy as prototype vehicles such as Uber’s fleet of Volvo XC90s.³⁴ Level 2 vehicles demand the driver’s continued attention to the road because their sensors are not designed to be infallible, even though they may work with convincing accuracy in the right conditions.³⁵ The first known fatal incident involving Autopilot occurred in 2016 when a Tesla Model S sedan crashed into a tractor trailer at more than seventy miles per hour near Williston, Florida, killing the Tesla’s driver.³⁶ The NTSB investigated the crash and concluded that the driver, Joshua Brown, had been using Autopilot and was not steering for the majority of the forty-one minute trip; the system had warned

³³ SAE International, a global standards-setting organization, ranks levels of driving autonomy on a six-tier scale, ranging from No Automation (Level 0) to Full Automation (Level 5). *Automated Vehicles for Safety*, *supra* note 31. A Level 2 system, classified as Partial Automation, “can actually control both steering and braking/accelerating simultaneously under some circumstances. The human driver must continue to pay full attention (‘monitor the driving environment’) at all times and perform the rest of the driving task.” *Id.*

³⁴ See, e.g., Jack Stewart, *Why Tesla’s Autopilot Can’t See a Stopped Firetruck*, WIRED (Aug. 27, 2018 3:27 PM), <https://www.wired.com/story/tesla-autopilot-why-crash-radar/>. A key component of today’s autonomous prototypes is lidar, which “use[s] lasers to build a precise, detailed map of the world around the car, and can easily distinguish between a hub cap and a cop car. . . . Just about everybody working on a fully self-driving system—the kind that doesn’t depend on lazy, inattentive humans for support—plans to use lidar, along with radar and cameras.” *Id.*

³⁵ See *id.*

³⁶ See generally NAT’L TRANSP. SAFETY BD., NTSB/HAR-17/02, PB2017-102600, COLLISION BETWEEN A CAR OPERATING WITH AUTOMATED VEHICLE CONTROL SYSTEMS AND A TRACTOR-SEMITRAILER TRUCK NEAR WILLISTON, FLORIDA, MAY 7, 2016 (2017) [hereinafter FLORIDA NTSB FINAL REPORT], <https://www.nts.gov/investigations/AccidentReports/Reports/HAR1702.pdf>. The Tesla was traveling in the eastbound lanes of a four-lane highway when the tractor trailer, travelling westbound, made a left-hand turn across the Tesla’s path onto a local road. *Id.* at vi. The Tesla struck the tractor trailer perpendicularly and sheared off its roof as it passed underneath the semitrailer, *id.*, which suggests the driver suffered fatal head trauma as often occurs in this type of “side underride” crash. See, e.g., Ronan Farrow et al., *Side Underride Crashes Kill 200 People a Year. Will Congress Act?*, NBC NEWS (Feb. 17, 2017 11:40 AM), <https://www.nbcnews.com/news/us-news/side-underride-crashes-kill-200-people-year-will-congress-act-n711721> (“It’s one of the most devastating traffic accidents: A car slams into the side of a tractor-trailer and crashes underneath, where many of its safety features are rendered worthless. The top of the vehicle may be sheared off; in many cases, the occupants are decapitated.”).

him to hold the steering wheel seven times prior to impact.³⁷ Meanwhile, the Tesla's automatic emergency braking system "was not designed to, and did not, identify the truck crossing the car's path or recognize the impending crash"³⁸; in a written statement, Tesla posited that the vehicle's camera system was unable to distinguish the white semitrailer from the bright daytime sky behind it.³⁹ Following the crash, Tesla revised Autopilot and transmitted a wireless update to Autopilot-equipped vehicles to reduce the amount of time the system would allow the driver to keep his hands off the wheel before issuing an alert.⁴⁰

Of the additional Autopilot fatalities that have occurred in the intervening years, none has garnered more media attention than the death of Apple engineer Wei "Walter" Huang,⁴¹ who died in March of 2018 after his Tesla Model X sport-utility veered into a concrete highway divider at more than seventy miles per hour.⁴² An NTSB investigation determined that Autopilot steered the car into a "gore," or a triangular section of pavement, that separated the main lanes from a left-side exit ramp.⁴³ Data from Huang's iPhone and the Tesla revealed he was playing a game on his phone and not steering the car in the seconds before the crash.⁴⁴ The Tesla headed toward a concrete divider, which the vehicle's collision avoidance system was not designed to detect; as a result, the Tesla actually *accelerated* to maintain its set cruising speed and plowed straight into the

³⁷ FLORIDA NTSB FINAL REPORT, *supra* note 36, at 14.

³⁸ *Id.* at 30.

³⁹ See The Tesla Team, *A Tragic Loss*, TESLA (June 30, 2016), <https://www.tesla.com/blog/tragic-loss> ("Neither Autopilot nor the driver noticed the white side of the tractor trailer against a brightly lit sky, so the brake was not applied.").

⁴⁰ FLORIDA NTSB FINAL REPORT, *supra* note 36, at 16.

⁴¹ See, e.g., Neal E. Boudette, *Fatal Tesla Crash Raises New Questions about Autopilot System*, N.Y. TIMES (Mar. 31, 2018), <https://www.nytimes.com/2018/03/31/business/tesla-crash-autopilot-musk.html>.

⁴² NAT'L TRANSP. SAFETY BD., NTSB/HAR-20/01, PB2020-100112, COLLISION BETWEEN A SPORT UTILITY VEHICLE OPERATING WITH PARTIAL DRIVING AUTOMATION AND A CRASH ATTENUATOR, MOUNTAIN VIEW, CALIFORNIA, MARCH 23, 2018, at ix (2020) [hereinafter CALIFORNIA NTSB FINAL REPORT], <https://www.nts.gov/investigations/AccidentReports/Reports/HAR2001.pdf>.

⁴³ *Id.*

⁴⁴ *Id.* at ix, 19–20.

divider.⁴⁵ The NTSB report declared the probable cause of the crash was “the Tesla Autopilot system steering the sport utility vehicle into a highway gore area due to system limitations, and the driver’s lack of response due to distraction likely from a cell phone game application and overreliance on the Autopilot partial driving automation system.”⁴⁶ The report also noted that Autopilot’s “ineffective monitoring of driver engagement . . . facilitated the driver’s complacency and inattentiveness.”⁴⁷

NTSB Chairman Robert Sumwalt offered more pointed criticism against the backdrop of that forensic analysis. “It’s time to stop enabling drivers in any partially automated vehicle to pretend that they have driverless cars. Because they don’t have driverless cars,” he said of manufacturers and federal regulators.⁴⁸ His message to drivers: “If you own a car with partial automation, you do not own a self-driving car. Don’t pretend that you do.”⁴⁹

C. Automated Driving Systems as a Scapegoat for Human Failures

Negative media coverage of crashes like the ones that killed Elaine Herzberg and Walter Huang creates the impression that autonomous driving technology cannot be trusted.⁵⁰ A more careful reading of those stories reveals that it is our trust in human beings, and not the technology, that is misplaced. One reason is that humans are prone to what the NTSB calls “automation complacency.”⁵¹ Simply put, when an autonomous

⁴⁵ *Id.* at x.

⁴⁶ *Id.* at ix.

⁴⁷ *Id.*

⁴⁸ David Shepardson, *Tesla and U.S. Regulators Strongly Criticized over Role of Autopilot in Crash*, REUTERS (Feb. 25, 2020 1:19 PM), <https://www.reuters.com/article/us-tesla-crash/tesla-and-us-regulators-strongly-criticized-over-role-of-autopilot-in-crash-idUSKBN20J2B8>.

⁴⁹ Michael Laris, *Fatal Tesla Crash Tied to Technology and Driver Failures, NTSB Says*, WASH. POST (Feb. 25, 2020 6:30 PM), https://www.washingtonpost.com/local/trafficandcommuting/deadly-tesla-crash-tied-to-technology-and-human-failures-ntsb-says/2020/02/25/86b710bc-574d-11ea-9b35-def5a027d470_story.html.

⁵⁰ See, e.g., Boudette, *supra* note 41 (noting, however, that “on the question of whether any flaws in [Autopilot] had led to the crash, the NTSB had “found no such flaws”).

⁵¹ UBER NTSB FINAL REPORT, *supra* note 13, at 43–44 (citing LAWRENCE

vehicle performs without failure, humans tend to rely on the automated system and become less attentive to the road.⁵² As a result, we are not able to react in time when the system suddenly requires our intervention.⁵³ The Tempe crash is a textbook case, where Rafaela Vasquez grew so confident in the Uber system that she turned her gaze to her smartphone and did not see Herzberg in time to prevent the collision.⁵⁴ That does not excuse Vasquez's conduct, but it illustrates the danger of apportioning driving responsibilities between human and machine.

A second reason is that human beings do not follow instructions. The owner's manuals of vehicles with semiautomated driving systems contain clear disclaimers that the technology is not a substitute for the driver's full attention to the road.⁵⁵ Nonetheless, many drivers push the technology to its limits and let their cars "drive themselves"—sometimes due to drowsiness, other times for attention on social media, but never with due respect for the vehicles' limitations.⁵⁶ Aware of

J. PRINZEL III, NASA, THE RELATIONSHIP OF SELF-EFFICACY AND COMPLACENCY IN PILOT-AUTOMATION INTERACTION iii (2002)); *see also* PRINZEL, *supra*, at 2 ("[Automation complacency] is exhibited as a false sense of security, which the operator develops while working with highly reliable automation; however, no machine is perfect and can fail without warning.").

⁵² UBER NTSB FINAL REPORT, *supra* note 13, at 43–44.

⁵³ *See id.* at 44.

⁵⁴ *Id.*

⁵⁵ *See, e.g.*, TESLA, *supra* note 29, at 85 ("Never depend on [Autopilot's] components to keep you safe. It is the driver's responsibility to stay alert, drive safely, and be in control of the vehicle at all times."); INFINITI, QX50 2020 OWNER'S MANUAL AND MAINTENANCE INFORMATION 5-101 (2019) (warning reader that ProPILOT Assist semiautomated driving system "is not a self-driving system" and "is not designed to correct careless, inattentive, or absent-minded driving," and that it remains "the driver's responsibility to stay alert, drive safely, keep the vehicle in the traveling lane, and be in control of the vehicle at all times").

⁵⁶ *E.g.*, Nelson Ireson, *This Moron Left the Driver's Seat in a Self-Driving Infiniti Q50 on the Highway: Video*, MOTOR AUTHORITY (Aug. 6, 2014), https://www.motorauthority.com/news/1093723_this-moron-left-the-drivers-seat-in-a-self-driving-infiniti-q50-on-the-highway-video; Alex Nunez, *Dumb Infiniti Owner Climbs into Passenger Seat, Lets Car Drive Itself*, ROAD & TRACK (Aug. 11, 2014), <https://www.roadandtrack.com/car-culture/videos/a8497/video-infiniti-q50-driver-climbs-into-passenger-seat-for-self-driving-demo/>; Alexander Stoklosa, *Tesla Driver Recorded Asleep, Not-Driving Driving down California's 405 Freeway*, CAR & DRIVER (June 17, 2019), <https://www.caranddriver.com/news/a28066700/tesla-driver-asleep-at-wheel/> (noting that other videos showed Tesla drivers "climbing out of the driver's seat and into the passenger or rear seats while the car seemingly drove itself"). Commendably, journalists derided these thrill seekers and cautioned readers

our tendency to break the rules, automakers design semiautomated systems to detect driver disengagement and eventually shut down if the driver does not respond to audible and visual warnings.⁵⁷ These safeguards are not infallible, and they are built with a delay so that the driver does not have to constantly tug at the steering wheel to signal that he is alert.⁵⁸ While the NTSB and others argue these “nanny” functions should be programmed more aggressively, ultimately there is only so much automakers can do to save drivers from themselves if they are not willing to use semiautomated driving systems as intended.

That is not to say the automakers are blameless. A third human factor in autonomous vehicle crashes, specifically those involving Teslas, is the braggadocio of the people who market them. For one thing, the name “Autopilot” is problematic because it suggests the driver can simply “set it and forget it” as though he were flying a private jet.⁵⁹ Elon Musk is known to make bold claims about the self-driving capabilities of his product.⁶⁰ And despite a raft of bad publicity linking Autopilot to the death of Tesla customers, the company’s website still proclaims, without a visible disclaimer, that “Autopilot enables your car to steer, accelerate and brake automatically within its lane. Full Self-Driving Capability introduces additional features and improves existing functionality to make your car more capable over time”⁶¹ Statements like these create

against performing similar stunts even before Autopilot fatalities brought the danger of misusing semiautomated driving systems into the national spotlight.

⁵⁷ *E.g.*, CALIFORNIA NTSB FINAL REPORT, *supra* note 42, at 15. Most systems rely on torque sensors in the steering wheel to detect if the driver is steering the car. *See id.*

⁵⁸ *See id.*

⁵⁹ *See Senator Markey Announces Recommended Safety Fixes for Tesla Autopilot*, ED MARKEY (Jan. 24, 2020), <https://www.markey.senate.gov/news/press-releases/senator-markey-announces-recommended-safety-fixes-for-tesla-autopilot> (“Tesla promotes confusion about the capabilities and limits of its driver assistance system with an inherently misleading name—‘Autopilot’—that encourages users to over-rely on the technology.”).

⁶⁰ *See, e.g.*, Boudette, *supra* note 41 (“Autopilot does not use lidar—a kind of radar based on lasers—that Waymo and others have maintained are crucial for fully autonomous vehicles. Mr. Musk has said he believes lidar is not necessary for Autopilot to be safe.”).

⁶¹ *Features*, TESLA, <https://www.tesla.com/model3> (last visited Apr. 30, 2020).

tension with the carefully crafted language in Tesla owner's manuals that spells out Autopilot's real-world limitations.⁶² If these claims embolden Tesla customers to use Autopilot in ways for which it was not designed, blame rightly falls on Tesla and not the driver. But misleading marketing does not amount to a defect in the technology. Autopilot represents a case of functional technology, engineered with known limitations, placed in the hands of human beings who misuse it at their peril.

D. Eliminating Human Drivers as a Long-Term Solution

The irony of crashes involving driver assistance technology like Autopilot is that they illustrate just how badly drivers need assistance. On the whole, human beings are far less reliable drivers than their computerized counterparts. First, even outside the context of automation complacency, humans are prone to distraction. Thousands of people die annually in the United States in distracted-driving crashes, many of which are linked to cell phone use.⁶³ Second, humans are creatures of emotion. Those emotions can manifest as derelict driving behavior, such as speeding, weaving between lanes, refusal to yield the right of way, and other forms of road rage. Third, humans drive irresponsibly. In 2018, more than 10,500 people died in crashes involving a drunken driver⁶⁴; another 775 road fatalities were attributed to driver drowsiness.⁶⁵ Finally, it takes time for humans to learn to drive well. New drivers may lack the judgment, cautiousness, and driving skill of more seasoned motorists, but they use the same roads as other drivers despite their inexperience. In that light, it comes as little surprise that drivers aged sixteen to nineteen are nearly three times more likely than those aged twenty or older to be in a fatal

⁶² See TESLA, *supra* note 29, at 85.

⁶³ U.S. DEP'T TRANSP. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 812 700, DISTRACTED DRIVING IN FATAL CRASHES, 2017, at 1 (2019), <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812700> (recording 2935 fatal crashes on U.S. roadways in 2017 that involved distraction, of which 14% involved cell phone use).

⁶⁴ U.S. DEP'T TRANSP. NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., DOT HS 812 826, 2018 FATAL MOTOR VEHICLE CRASHES: OVERVIEW 6 (2019), <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812826>.

⁶⁵ *Id.* at 8.

crash.⁶⁶

All of the foregoing bodes in favor of widespread adoption of autonomous vehicles. Because self-driving cars eliminate most of our human shortcomings, driving safety experts predict driving deaths will drop dramatically in the United States once production autonomous vehicles take to the roadways.⁶⁷ Concededly, technology developers and car manufacturers have a few obstacles to overcome before we reach that point. Reducing the cost of self-driving equipment,⁶⁸ preventing inclement weather from interfering with vehicle sensors,⁶⁹ and persuading consumers that they can entrust their lives to a computer⁷⁰ are three current challenges that may delay the mass deployment of autonomous cars. But the push toward vehicle autonomy, much like vehicle electrification, has developed a momentum of its own. That momentum, coupled with the significant lifesaving benefits that autonomous vehicle technology has to offer, means that self-driving cars are not a question of if, but when.

⁶⁶ *Teen Drivers: Get the Facts*, CTRS. FOR DISEASE CONTROL AND PREVENTION (Oct. 30, 2019), https://www.cdc.gov/motorvehiclesafety/teen_drivers/teendrivers_factsheet.html.

⁶⁷ *E.g.*, Chris Isidore, *Self-Driving Cars Are Already Really Safe*, CNN BUSINESS (Mar. 21, 2018 12:07 PM), <https://money.cnn.com/2018/03/21/technology/self-driving-car-safety/> (quoting driving safety experts on reasons automated driving systems are safer and more capable than human drivers); *accord Self-Driving Coalition Statement*, *supra* note 12 (“By removing humans from the driving process entirely, fully self-driving vehicles offer an opportunity to significantly reduce the number of crash fatalities and injuries.” (quoting Self-Driving Coal. Gen. Counsel and Former NHTSA Adm’r David Strickland)).

⁶⁸ Alex Davies, *This Lidar Is So Cheap It Could Make Self-Driving a Reality*, WIRED (July 11, 2019 6:00 AM), <https://www.wired.com/story/lidar-cheap-make-self-driving-reality/> (citing \$75,000-per-unit cost of current lidar equipment and quoting Elon Musk as saying “[a]nyone relying on lidar is doomed” because it is so expensive).

⁶⁹ Will Knight, *Snow and Ice Pose a Vexing Obstacle for Self-Driving Cars*, WIRED (Feb. 3, 2020 7:00 AM), <https://www.wired.com/story/snow-ice-pose-vexing-obstacle-self-driving-cars/>.

⁷⁰ See Paul Lienert & Maria Caspani, *Americans Still Don’t Trust Self-Driving Cars, Reuters/Ipsos Poll Finds*, REUTERS (Apr. 1, 2019 11:59 AM), <https://www.reuters.com/article/us-autos-selfdriving-poll/americans-still-dont-trust-self-driving-cars-reuters-ipsos-poll-finds-idUSKCN1RD2QS>.

E. Challenges of Autonomous and Human-Driven Vehicles Using Common Infrastructure

Comingling autonomous vehicles with human-driven cars on public roads does not pose a problem in the near term. That is because autonomous vehicles, as they are designed today, operate reactively like a human driver: they interpret signals from the surrounding environment to make driving decisions. For example, when a human driver observes the brake lights of a leading vehicle, he interprets those lights as a signal that the vehicle is braking and will slow down, and applies his own brakes to avoid a rear-end collision. An autonomous vehicle goes through a similar process, substituting external sensors and computer software for the human's eyes and brain, respectively. It particularly benefits from an invisible sixth sense, radar, which can detect other vehicles' changes in speed and direction without relying on visual cues.⁷¹ In theory, autonomous cars and human-driven cars could cohabitate the roadways forever by reacting to each other, pedestrians, and various other stimuli in the driving environment just as we do today.

The problem is that this reactive driving model does not unlock autonomous vehicles' full potential. Vehicle-to-vehicle ("V2V") communication, as well as vehicle-to-infrastructure ("V2I") communication, represents the next logical step in autonomous driving development. Simply put, this technology allows vehicles to communicate wirelessly with one another or the road infrastructure around them.⁷² V2V communication is already available on a range of Mercedes-Benz models, albeit in a very limited capacity—Mercedes can only communicate with fellow Mercedes.⁷³ Likewise, Audi offers a form of V2I communication that collects data from traffic lights to alert the driver when the signal is about to change from red to green; the

⁷¹ See generally Katie Burke, *How Does a Self-Driving Car See?*, NVIDIA (Apr. 15, 2019), <https://blogs.nvidia.com/blog/2019/04/15/how-does-a-self-driving-car-see/>. Nvidia is a major U.S. developer of autonomous driving technology.

⁷² SCHWARTZ, *supra* note 1, at 176–77.

⁷³ See *Mercedes Me Connect*, MERCEDES-BENZ, <https://www.mbusa.com/en/mercedes-me-connect> (last visited May 2, 2020) ("With Car-to-X Communication, information is exchanged between vehicles on the road, alerting you to various hazards up ahead, such as an accident, fog or icy conditions.").

system can even recommend speed adjustments that will ensure the vehicle passes through upcoming intersections during green light intervals.⁷⁴ Today, these applications of the technology are more luxury car gimmickry than a serious element of the driving ecosystem; however, they have serious potential to promote the safe, efficient flow of traffic, because they will allow autonomous vehicles to operate *proactively* rather than reactively. For example, highway lane merges will be more organized because self-driving cars will be able to “negotiate” and synchronize their positions ahead of time, and the vehicles will be able to safely travel closer together at higher speeds because their movements will be entirely predictable to one another.⁷⁵

The only wrench in the system, then, would be the human-driven car that does not play by the rules. One of the difficulties that autonomous prototype test drivers have encountered is the belligerent conduct of other drivers. Autonomous prototypes are generally programmed to drive conservatively in the interest of safety.⁷⁶ That means adhering to speed limits and maintaining a safe following distance from the vehicle ahead—practices foreign to probably the majority of drivers in any U.S. metropolitan area. Other drivers tend to become impatient and take advantage of self-driving prototypes in high-tension traffic situations that require assertiveness to keep moving,⁷⁷ such as four-way stops or toll both merges. As a result, developers have either had to take the wheel temporarily so that the passive prototype does not become a sitting duck, or program the car to be more assertive, more humanlike, and less strictly law-

⁷⁴ *Audi Expands Traffic Light Information - Now Includes Speed Recommendations to Minimize Stops*, AUDI NEWSROOM, <https://media.audiusa.com/en-us/releases/301> (last visited May 2, 2020).

⁷⁵ See generally LIN LI ET AL., SAE INT’L, SWARM INTELLIGENCE BASED ALGORITHM FOR MANAGEMENT OF AUTONOMOUS VEHICLES ON ARTERIALS (2018). In addition, “we may be able to prevent wrong-way driving entirely, along with a host of other car-related incidents that lead to personal injuries and property destruction. A V2I could tell the car it is going the wrong way and compel the car to stop.” SCHWARTZ, *supra* note 1, at 177; accord, FLORIDA NTSB FINAL REPORT, *supra* note 36, at 38–40 (discussing research on V2V technology’s potential to prevent crashes).

⁷⁶ Jeremy Hsu, *Volvo Fears Human Drivers Will Bully Driverless Cars*, DISCOVER (Nov. 2, 2016 7:44 PM), <http://blogs.discovermagazine.com/lovesick-cyborg/2016/11/02/volvo-fears-human-drivers-will-bully-driverless-cars/#.XKgd35hKg2w>.

⁷⁷ *Id.*

abiding.⁷⁸ It is not difficult to imagine how the problem might be exacerbated when, instead of one self-driving car traveling among a bunch of human-driven cars, one or two aggressive human drivers infiltrate a group of coordinated autonomous vehicles that are not able to communicate with the interlopers. The autonomous vehicles could try to maneuver around them, but where self-driving cars become the predominant form of transportation, the problem might be remedied just as easily through government action to eliminate human driving.

III. We Have No Fundamental Right to Drive

The specter of a driving ban raises an important question: can the states or the federal government eliminate our ability to drive within the bounds of the U.S. Constitution? To answer that question, we first must establish whether physically driving a car is a fundamental personal freedom. If it is, any government effort to curtail that freedom would be subject to strict scrutiny: the driving ban would have to be narrowly tailored to serve a compelling state interest in the eyes of the reviewing court.⁷⁹ If driving a car is not a fundamental freedom, the human driving ban would be subject to the far less rigorous rational basis test; in other words, it would have to be rationally related to a legitimate state interest.⁸⁰

⁷⁸ Claire Groden, *Why Google Wants its Self-Driving Cars to Be More Like You*, FORTUNE (Sept. 29, 2015 8:57 AM), <http://fortune.com/2015/09/29/google-self-driving-cars-humans/>.

⁷⁹ *E.g.*, *Zizi v. Bausman*, 306 F. Supp. 3d 697, 705 (E.D. Pa. 2018) (“Restrictions on fundamental rights must pass strict scrutiny and be narrowly tailored to serve a compelling governmental interest.”). *See generally* Roy G. Spece, Jr. & David Yokum, *Scrutinizing Strict Scrutiny*, 40 VT. L. REV. 285 (2015).

⁸⁰ *E.g.*, *Winston v. City of Syracuse*, 887 F.3d 553, 566 (2d Cir. 2018) (“To establish a substantive due process violation, a plaintiff must show . . . that the statute, ordinance, or regulation in question is not rationally related to a legitimate government interest.”); *Bausman*, 306 F. Supp. 3d at 705 (“Where the claimed right is not fundamental, the governmental regulation need only be reasonably related to a legitimate state objective.”); *see also* *M’Culloch v. Maryland*, 17 U.S. 316, 317 (“Let the end be legitimate, let it be within the scope of the [C]onstitution, and all means which are appropriate, which are plainly adapted to that end, which are not prohibited, but consist with the letter and spirit of the [C]onstitution, are constitutional.”). *See generally* Thomas B. Nachbar, *The Rationality of Rational Basis Review*, 102 VA. L. REV. 1627 (2016).

The first eight amendments to the U.S. Constitution grant every person in the United States certain well-known, well-defined fundamental rights. Some of these include freedom of speech, religion, and the press⁸¹; the right to bear arms⁸²; the right against unreasonable searches and seizures⁸³; the right not to testify against oneself in a criminal proceeding⁸⁴; the right to the assistance of counsel in a criminal proceeding⁸⁵; the right to a jury trial⁸⁶; and the right against cruel and unusual punishment.⁸⁷ The Supreme Court has recognized other fundamental rights not expressly granted in the Constitution.⁸⁸ These include the rights to marry, to have children, to direct the education and upbringing of one's children, to marital privacy, to use contraception, to bodily integrity, and to abortion, which are conferred via the Due Process Clauses' guarantees of "liberty."⁸⁹ Driving a car is conspicuously absent from that list. However, the Court has also provided that Americans have a fundamental right "to travel from one state to another, and necessarily to use the highways and other instrumentalities of interstate commerce in doing so"⁹⁰

A. The Fundamental Right to Interstate Travel

The Supreme Court's decisions on the right to interstate travel reflect a longstanding judicial debate over where that

⁸¹ U.S. CONST. amend. I.

⁸² *Id.* amend. II.

⁸³ *Id.* amend. IV.

⁸⁴ *Id.* amend. V.

⁸⁵ *Id.* amend. VI.

⁸⁶ *Id.* amends. VI, VII.

⁸⁷ U.S. CONST. amend. VIII.

⁸⁸ *See* *Washington v. Glucksberg*, 521 U.S. 702, 720 (1997).

⁸⁹ *Id.*; *see also* U.S. CONST. amends. V, XIV.

⁹⁰ *United States v. Guest*, 383 U.S. 745, 757 (1966). The Court's more recent decision in *Saenz v. Roe*, 526 U.S. 489 (1999), specified that the right to travel

protects [1] the right of a citizen of one State to enter and to leave another State, [2] the right to be treated as a welcome visitor rather than an unfriendly alien when temporarily present in the second State, and, for those travelers who elect to become permanent residents, [3] the right to be treated like other citizens of that State.

Id. at 500.

right resides within the U.S. Constitution.⁹¹ The debate originated with *Crandall v. Nevada*,⁹² in which the Court considered the validity of a one-dollar Nevada tax on all persons leaving the state by railroad, stage coach, or another mode of for-hire transportation.⁹³ Invoking language from then-Chief Justice Taney's dissenting opinion in *The Passenger Cases*,⁹⁴ the Court struck down the tax as infringing on U.S. citizens' right to travel freely from state to state: "We are all citizens of the United States, and as members of the same community must have the right to pass and repass through every part of it without interruption, as freely as in our own States."⁹⁵ The Court based its holding on a series of cases from the Court's early history (the most famous of which being *M'Culloch v. Maryland*⁹⁶) that invalidated state taxes that were seen to encroach on federal power:

In all these cases the opponents of the taxes levied by the States were able to place their opposition on no express provision of the Constitution, except in that of *Brown v. Maryland*. But in all the other cases, and in that case also, the court distinctly placed the invalidity of the State taxes on the ground that they interfered with an authority of the Federal government, which was itself only to be sustained as necessary and proper to the exercise of some other power expressly granted.⁹⁷

By the Court's reasoning, the federal government's right to exercise its constitutional powers without interference from the states meant that U.S. citizens—whom the government existed to serve and upon whose service it might call in performance of its duties—possessed a "correlative" right to travel freely throughout the country so that they could engage with that

⁹¹ See *Guest*, 383 U.S. at 759.

⁹² 73 U.S. 35 (1867).

⁹³ *Id.* at 39.

⁹⁴ 48 U.S. (7 How.) 283 (1849).

⁹⁵ *Crandall*, 73 U.S. at 49.

⁹⁶ 17 U.S. (4 Wheat.) 316 (1819).

⁹⁷ *Crandall*, 73 U.S. at 48.

government.⁹⁸ The Court did not trace the source of this right to a particular provision of the Constitution.⁹⁹ Justice Miller stated explicitly that, with one exception,¹⁰⁰ the Court's prior decisions in the state taxation cases rested "on no express provision of the Constitution . . . [but rather] on the ground that they interfered with an authority of the Federal government"¹⁰¹

The Court's 1941 decision in *Edwards v. California*¹⁰² saw the Court split into two camps on the issue. *Edwards* struck down a California ban on transporting indigents into the state because it infringed on the right to interstate travel.¹⁰³ The majority opinion, delivered by Justice Byrnes, traced the right to travel to the Commerce Clause, which grants Congress the power to regulate interstate commerce.¹⁰⁴ The majority defined "commerce" to include the transportation of persons across state lines and held that the California law unduly burdened interstate commerce.¹⁰⁵ However, Justice Douglas, joined by Justices Black and Murphy, wrote a concurring opinion and reasoned that the California law in fact violated the Privileges and Immunities Clause of the Fourteenth Amendment, regardless of whether it intruded upon Congress' power to regulate interstate commerce.¹⁰⁶ The crux of Douglas' reasoning was that the freedom to travel between the states had long been recognized as a right of national citizenship that the Fourteenth Amendment Privileges and Immunities Clause protects from

⁹⁸ *Id.* at 44.

⁹⁹ *See id.* at 48.

¹⁰⁰ *Id.*; *see also* *Brown v. Maryland*, 25 U.S. (12 Wheat.) 419 (1827) (citing U.S. CONST. art. I, § 10, cl. 2; *id.* art. I, § 8, cl. 3).

¹⁰¹ *Crandall*, 73 U.S. at 48.

¹⁰² 314 U.S. 160 (1941).

¹⁰³ *Id.* at 177.

¹⁰⁴ *Id.* at 172; *see also* U.S. CONST. art. I, § 8, cl. 3; *United States v. Guest*, 383 U.S. 745, 758 (1966).

¹⁰⁵ *Edwards*, 314 U.S. at 173.

¹⁰⁶ *Id.* at 177–78 (Douglas, J., concurring); *see also* U.S. CONST. amend. XIV, § 1 ("No State shall . . . abridge the privileges or immunities of citizens of the United States . . ."). According to Justice Douglas, the majority did not give enough weight to a bedrock principle of our constitutional liberty: "[T]he right of persons to move freely from State to State occupies a more protected position in our constitutional system than does the movement of cattle, fruit, steel and coal across state lines. . . . [T]he right involved is so fundamental that I deem it appropriate to indicate the reach of the constitutional question which is present." *Edwards*, 314 U.S. at 177.

state interference.¹⁰⁷

The constitutional source of our fundamental right to interstate travel remains a point of contention in the legal community.¹⁰⁸ “Although there have been recurring differences in emphasis within the Court as to the source of the constitutional right of interstate travel, there is no need here to canvass those differences further. All have agreed that the right exists.”¹⁰⁹ The Supreme Court has made no similar pronouncement about the right to *intrastate* travel, and, in fact, “has explicitly decided *not* to decide whether a constitutional right to intrastate travel exists.”¹¹⁰ For the purpose of this Comment, it does not matter whether the Constitution guarantees a right to intrastate travel; we are guaranteed a right to interstate travel, and if that carried with it a fundamental right to drive a car, then any ban on human driving would be unconstitutional on that basis.

B. Distinguishing the Fundamental Right to Interstate Travel from the Privilege of Driving

In a nation where public transit options are limited outside major metropolitan areas¹¹¹ and the number of registered

¹⁰⁷ *Id.* at 178–79.

¹⁰⁸ Matthew Gillespie, Note, *Shifting Automotive Landscapes: Privacy and the Right to Travel in the Era of Autonomous Motor Vehicles*, 50 WASH. U. J. L. & POL’Y 147, 149–50 (2016) (“While courts have unanimously agreed that a right to travel exists, the consensus surrounding the doctrine seemingly stops there. Courts and commentators dispute not only the basis of the right to travel, but also its scope. This has resulted in an opaque right to travel doctrine.” (footnotes omitted)); accord Timothy Baldwin, Note & Comment, *The Constitutional Right to Travel: Are Some Forms of Transportation More Equal than Others?*, 1 NW. J. L. & SOC. POL’Y 213, 233 (2006).

¹⁰⁹ *Guest*, 383 U.S. at 759; see also Duane W. Shroeder, Comment, *The Right to Travel: In Search of a Constitutional Source*, 55 NEB. L. REV. 117, 122 (1975) (“[T]he Court seems to have given up any notion that the right to travel can be located in any single part of the Constitution. Instead, it cites the old cases and may add a sentence indicating that the nature of the federal union requires a right of interstate travel. An excellent statement illustrating this idea is found in *United States v. Guest*.” (footnotes omitted)).

¹¹⁰ Baldwin, *supra* note 108, at 243 (citing *Mem’l Hosp. v. Maricopa County*, 415 U.S. 250, 255–56 (1974)); accord, Gillespie, *supra* note 108, at 150–51 (“Of these two rights, the Supreme Court has chosen to only rule on the [right to interstate travel], leaving divergent rulings on the existence and extent of a right to intrastate travel among[] the circuits.” (footnotes omitted)).

¹¹¹ See Baldwin, *supra* note 108, at 218–25.

passenger vehicles is approaching 200 million,¹¹² one could argue that the right to drive a car is a necessary corollary of the right to travel¹¹³—and the argument is not unprecedented. In *Berberian v. Lussier*,¹¹⁴ the Supreme Court of Rhode Island linked driving with “the right to be free from unreasonable interference in the pursuit of a livelihood.”¹¹⁵ The court reasoned:

The use of the automobile as a necessary adjunct to the earning of a livelihood in modern life requires us in the interest of realism to conclude that the right to use an automobile on the public highways partakes of the nature of a liberty within the meaning of the constitutional guarantees of which the citizen may not be deprived without due process of law.¹¹⁶

The Supreme Court of Idaho echoed those sentiments with its decision in *Adams v. City of Pocatello*¹¹⁷ when it stated that “[t]he right to operate a motor vehicle upon the public streets and highways is not a mere privilege. It is a right or liberty, the enjoyment of which is protected by the guarantees of the federal and state constitutions.”¹¹⁸

¹¹² *Number of U.S. Aircraft, Vehicles, Vessels, and Other Conveyances*, U.S. DEPT. TRANSP. BUREAU TRANSP. STAT., <https://www.bts.gov/content/number-us-aircraft-vehicles-vessels-and-other-conveyances> (last visited Mar. 27, 2020) (recording 193,672,370 registered vehicles in “Light duty vehicle, short wheel base” category, which includes passenger cars, light trucks, vans and sport utility vehicles with a wheelbase of 121 inches or less, in 2017).

¹¹³ *See, e.g.*, Gillespie, *supra* note 108, at 154 (“Today, the right to travel is, if anything, more critical to the functioning of society. Simple acts such as driving one’s own vehicle are often critical to employment, health care, and even maintaining family ties.” (footnotes omitted)).

¹¹⁴ 139 A.2d 869 (1958).

¹¹⁵ *Id.* at 872.

¹¹⁶ *Id.*

¹¹⁷ 416 P.2d 46 (1966).

¹¹⁸ *Id.* at 48. Both courts nonetheless acknowledged that regulating driving was a proper exercise of the states’ police powers. *See Lussier*, 139 A.2d at 872 (“Whatever may be its nature, the right to use the public highways for travel by motor vehicles is one which properly can be regulated by the legislature in the valid exercise of the police power of the state.”); *Adams*, 416 P.2d at 48 (“The right of a citizen to operate a motor vehicle upon the public

However, the majority of courts to consider that argument have rejected it,¹¹⁹ as “American courts generally consider restrictions on forms of travel lawful under a state’s discretion to exercise its police power.”¹²⁰ In the 1990s, the U.S. Court of Appeals for the Ninth Circuit confronted the issue head-on when California resident Donald Miller brought an appeal that argued the “right to interstate travel encompasses a fundamental right to drive a car.”¹²¹ The California Department of Motor Vehicles had denied Miller’s driver’s license renewal application because he refused to provide his social security number.¹²² By Miller’s reasoning, rescission of his license impinged his fundamental travel rights because it denied him the right to drive, and driving was an essential mode of transportation in modern society.¹²³

The Ninth Circuit affirmed the district court’s determination that “by denying Miller a single mode of transportation—in a car driven by himself—the DMV did not unconstitutionally impede Miller’s right to interstate travel.”¹²⁴

streets and highways, is subject to reasonable regulation by the state in the exercise of its police power.”).

¹¹⁹ Baldwin, *supra* note 108, at 216 (“[R]emarkably, American courts do not protect an individual’s right to use a motor vehicle.”) (citing *Duncan v. Cone*, No. 00-5705, 2000 U.S. App. LEXIS 33221 (6th Cir. Dec. 7, 2000) (finding there is no fundamental right to drive a car); *State v. Cox*, 16 A.2d 508, 512 (N.H. 1940) (finding same), *aff’d* *Cox v. New Hampshire*, 312 U.S. 569 (1941)); accord Gillespie, *supra* note 108, at 152 (“Despite the high deference traditionally given to the right to travel generally, courts have consistently refused to establish a general right to drive.”).

¹²⁰ Baldwin, *supra* note 108, at 220 (citing *Mackey v. Montrym*, 443 U.S. 1 (1979) (finding that the states’ police power encompasses reasonable restrictions on travel, such as drunk driving laws)).

¹²¹ *Miller v. Reed*, 176 F.3d 1202, 1205 (9th Cir. 1999); *see also* Baldwin, *supra* note 108, at 251–52.

¹²² *Miller*, 176 F.3d at 1205. Miller claimed the California DMV’s social security number requirement conflicted with his religious beliefs: “Miller [did] not belong to any organized religion, but ha[d] a long-standing and well-established personal system of theological belief,” positing that “each individual’s actions should be in furtherance of the separate evolving identity of each individual during their life.” *Id.* Accordingly, providing a “single common identifier” (like a social security number) to different parties for different purposes was “tantamount to a ‘sin,’ as that term is commonly used.” *Id.*

¹²³ *Id.* at 1205. The right-to-travel claim was part of a two-pronged argument that also alleged violations of Miller’s religious freedom. *See id.* A “hybrid” claim that implicated Miller’s religious freedom and another fundamental right (here, travel) would subject the California law, as applied in Miller’s case, to strict scrutiny. *Id.* at 1204.

¹²⁴ *Id.*

The court pointed to a group of state and federal cases that distinguished the right to travel from the right to a particular *mode* of travel.¹²⁵ The theory is that, because many reasonably accessible means of travel exist, state limitations on (or even outright denial of access to) one such means does not seriously inhibit one's ability to travel generally. The Ninth Circuit invoked the Supreme Court of Rhode Island's decision in *Berberian v. Petit*:

The . . . argument that the right to operate a motor vehicle is fundamental because of its relation to the fundamental right of interstate travel is utterly frivolous. The plaintiff is not being prevented from traveling interstate by public transportation, by common carrier, or in a motor vehicle driven by someone with a license to drive it. What is at issue here is not his right to travel interstate, but his right to operate a motor vehicle on the public highways, and we have no hesitation in holding that this is not a fundamental right.¹²⁶

Interestingly, a small New York defense firm posited¹²⁷ that the Supreme Court might abrogate *Miller* with its decision in

¹²⁵ *Id.* at 1205–06 (citing *Monarch Travel Servs., Inc. v. Associated Cultural Clubs, Inc.*, 466 F.2d 552, 554 (9th Cir. 1972) (“A rich man can choose to drive a limousine; a poor man may have to walk. The poor man's lack of choice in his mode of travel may be unfortunate, but it is not unconstitutional.”)); *City of Houston v. FAA*, 679 F.2d 1184, 1198 (5th Cir. 1982) (“At most, [the air carrier plaintiffs'] argument reduces to the feeble claim that passengers have a constitutional right to the most convenient form of travel. That notion, as any experienced traveler can attest, finds no support whatsoever in [the Supreme Court's right of interstate travel jurisprudence] or in the airlines' own schedules.”); *Berberian v. Petit*, 374 A.2d 791, 794 (R.I. 1977)).

¹²⁶ *Petit*, 374 A.2d at 794 (internal citations and footnotes omitted). This decision represented a striking about-face for a court that not two decades prior had reasoned that driving a car “partakes of the nature of a liberty within the meaning of the constitutional guarantees of which the citizen may not be deprived without due process of law.” *Berberian v. Lussier*, 139 A.2d 869, 872 (R.I. 1958).

¹²⁷ See Brandon Hellwig, *Supreme Court Has the Opportunity to Declare that Driving a Right Not Merely a Privilege*, NAVE LAW FIRM (Apr. 25, 2016), <https://www.nysdwi.com/supreme-court-opportunity-declare-driving-right-not-merely-privilege/>.

Birchfield v. North Dakota.¹²⁸ The *Birchfield* case was a consolidation of three appeals whose disposition rested on the answer to a single question: “whether motorists lawfully arrested for drunk driving may be convicted of a crime or otherwise penalized for refusing to take a warrantless test measuring the alcohol in their bloodstream.”¹²⁹ The firm suggested that the states’ arguments in favor of warrantless blood or breath tests for alcohol were “premised on the fact that the ability to drive a vehicle is not a right, but a privilege, and is therefore not subject to the full protections of the Constitution.”¹³⁰ If the Court saw an opportunity to declare driving a fundamental right in *Birchfield*, it declined the invitation: the decision repeatedly refers to the “privilege of driving,”¹³¹ validating the Ninth Circuit and other courts’ conclusion that the fundamental right to interstate travel does not create a fundamental right to drive.

IV. The States or the Federal Government Could Eliminate Human Driving

A. State Power to Regulate Driving

With respect to state regulation of driving, the Supreme Court held in the early-twentieth-century case of *Hendrik v. Maryland*¹³² that states have broad discretion to regulate automobile travel as an exercise of their police powers:

In the absence of national legislation covering the subject, a state may rightfully prescribe uniform regulations necessary for public safety and order in respect to the operation upon its highways of all motor vehicles, those moving in interstate commerce as well as others. And to this

¹²⁸ 136 S. Ct. 2160 (2016).

¹²⁹ *Id.* at 2172.

¹³⁰ Hellwig, *supra* note 127.

¹³¹ *Birchfield*, 136 S. Ct. at 2169, 2179, 2186. In each instance, the Court uses the phrase “privilege of driving” where it describes the stance of a third party (i.e., a state legislature or the United States) on the requirement that drivers submit to a BAC test; the Court never challenges the premise that driving is a privilege. *See id.*

¹³² 235 U.S. 610 (1915).

end it may require the registration of such vehicles and the licensing of their drivers, charging therefor reasonable fees graduated according to the horse-power of the engines, a practical measure of size, speed, and difficulty of control. This is but an exercise of the police power uniformly recognized as belonging to the states and essential to the preservation of the health, safety, and comfort of their citizens; and it does not constitute a direct and material burden on interstate commerce. The reasonableness of the state's action is always subject to inquiry in so far as it affects interstate commerce, and in that regard, it is likewise subordinate to the will of Congress.¹³³

Under *Hendrick*, the states' regulatory power was subject to two conditions: (1) state regulations were subordinate to any federal regulations on the same subject; and (2) those regulations had to be reasonable to the extent that they affected interstate commerce.¹³⁴ That second reasonableness requirement evolved into a balancing test with the Court's decision in *Southern Pacific Co. v. Arizona ex rel. Sullivan*,¹³⁵ which struck down an Arizona law that limited the number of rail cars a passenger or freight train could carry when traveling through the state.¹³⁶ The Court balanced the state's safety interest in minimizing "slack action"¹³⁷ against the national interest in the efficient movement of trains across state lines,¹³⁸

¹³³ *Id.* at 622–23.

¹³⁴ *Id.*

¹³⁵ 325 U.S. 761 (1945).

¹³⁶ *Id.* at 763, 783–84.

¹³⁷ "Slack action is the amount of free movement of one car before it transmits its motion to an adjoining coupled car. This free movement results from the fact that in railroad practice cars are loosely coupled . . ." *Id.* at 776. The state's logic was that the greater number of cars, the greater the slack action, and the greater the slack action, the greater the jolting ripple effect of movements from car to car, which could injure people at the rear of the train. *Id.*

¹³⁸ "[T]he matters for ultimate determination here are the nature and extent of the burden which the state regulation of interstate trains, adopted as a safety measure, imposes on interstate commerce, and whether the relative weights of the state and national interests involved are such as to make

and found that while the safety advantage of the law was “slight and dubious”¹³⁹ at best,¹⁴⁰ the burden on interstate commerce was significant, because trains that exceeded the proscribed length had to disassemble at the Arizona border.¹⁴¹

Throughout its *Southern Pacific* opinion, the Court cited uniformity as the principal factor that determined whether state regulations should be subverted in the name of interstate commerce.¹⁴² In his dissent, Justice Black succinctly summarized the reasons for the majority’s emphasis on the need for uniformity: “[T]he evil [the Court] finds in a lack of uniformity is that it (1) delays interstate commerce, (2) increases its cost and (3) impairs its efficiency.”¹⁴³ That is not to say that *all* state regulations affecting interstate commerce must be uniform, but rather, where uniformity of regulation promotes efficient commerce, states face a constitutional hurdle imposing laws that diverge from the prevailing practice in the rest of the nation.¹⁴⁴

In light of *Hendrick*’s deference to the states’ police power and *Southern Pacific*’s “majority rule” view toward uniformity in interstate commerce, it should come as no surprise that most state driving regulations would survive constitutional challenge. States regulate a wide range of driving conduct, such as speed, passing, and use of the car’s seatbelts, headlights, and turn signals. Those regulations vary from state to state, which undermines uniformity, but compliance with different driving laws requires such incidental adjustments on the part of vehicle occupants that they impose little burden on interstate

inapplicable the rule . . . that the free flow of interstate commerce and its freedom from local restraints in matters requiring uniformity of regulation are interests safeguarded by the commerce clause from state interference.” *Id.* at 770–71.

¹³⁹ *Id.* at 779.

¹⁴⁰ Train accident statistics indicated the Arizona law was actually making rail transportation *more* dangerous; to make up for the reduced number of rail cars per train, carriers had to operate more trains, which increased the likelihood of collisions. *Id.* at 777. Tellingly, “[t]he accident rate in Arizona [was] much higher than on comparable lines elsewhere, where there is no regulation of length of trains.” *Id.* at 778.

¹⁴¹ *S. Pac. Co. v. Arizona ex rel. Sullivan*, 325 U.S. 761, 772, 774 (1945).

¹⁴² *See id.* at 767, 770–71, 773, 776, 779, 781.

¹⁴³ *Id.* at 793 (Black, J., dissenting).

¹⁴⁴ *See id.* at 774 (“At present the seventy freight car laws are enforced only in Arizona and Oklahoma, with a fourteen car passenger car limit in Arizona.”).

commerce. To use the aforementioned examples, drivers can instantaneously adjust their speed, choose to pass or not to pass another vehicle, and exercise similar discretion with respect to use of the vehicle's seatbelts, headlights, and turn signals as local law requires. All of this is possible because *federal* regulations, discussed *infra*, provide uniformity in the way that newly manufactured vehicles are equipped. While rear passengers might not be required to wear seatbelts in State A but *are* required to wear seatbelts in State B, federal law guarantees that seatbelts are available for their use when the driver crosses state lines,¹⁴⁵ and compliance is achieved simply by fastening the seatbelt buckle.

One area where uniform vehicle design does not help drivers comply with divergent state driving laws is the minimum driving age. While all states have a graduated licensing system that requires young drivers to obtain a learner's permit or a restricted license before they receive full driving privileges, the age and experience level at which state residents are eligible for those provisional licenses is entirely nonuniform.¹⁴⁶ More critically, the choice to *honor* out-of-state provisional licenses also varies from state to state. For example, learner's permits are available to drivers in South Dakota as early as fourteen years of age,¹⁴⁷ but New York State does not allow anyone under the age of sixteen—even if he or she has a valid out-of-state learner's permit or driver's license—to drive within its borders.¹⁴⁸ The problem is largely academic, as novice drivers are less prone to venture between states with such significant disparities in permitting requirements, and drivers engaged in commerce of a litigable scale would probably have federally-regulated commercial driver's licenses.¹⁴⁹ However, some states'

¹⁴⁵ See Occupant Crash Protection, 49 C.F.R. § 571.208 (2016) (requiring seatbelt assemblies for all designated seating positions in passenger cars).

¹⁴⁶ *Graduated Driver Licensing Information*, INS. INST. HIGHWAY SAFETY, <https://www.iihs.org/iihs/topics/laws/graduatedlicenseintro> (last visited May 3, 2020).

¹⁴⁷ See *id.*

¹⁴⁸ *Driving Restrictions on Out-of-State Permits, Junior Licenses, or Graduated Licenses*, N.Y. ST. DEPT MOTOR VEHICLES, http://nysdmv.custhelp.com/app/answers/detail/a_id/19/~driving-restrictions-on-out-of-state-permits%2C-junior-licenses%2C-or-graduated (last visited May 3, 2020).

¹⁴⁹ See generally Commercial Driver's License Standards; Requirements and Penalties, 49 C.F.R. §§ 383.1–383.155.

refusal to accept out-of-state driver's licenses or permits, which up to now has gone unchallenged, could take on greater precedential value in an era when states begin to outlaw driving altogether.

B. Federal Power to Regulate Driving

Generally speaking, while states regulate the driver, the federal government regulates the car.¹⁵⁰ In 1966, Congress enacted the National Traffic and Motor Vehicle Safety Act ("NTMVSA")¹⁵¹ "to reduce traffic accidents and deaths and injuries to persons resulting from traffic accidents."¹⁵² The legislation came in response to a precipitous rise in motor vehicle fatalities as an increasing number of Americans took to the nation's highways.¹⁵³ Before he signed the bill, President Johnson declared that "[i]n this century, more than 1,500,000 of our fellow citizens have died on our streets and highways; nearly three times as many Americans as we have lost in all our wars."¹⁵⁴ While its sister legislation, the Highway Safety Act, sought to address needed safety improvements to the nation's road infrastructure,¹⁵⁵ the NTMVSA authorized the Secretary of Transportation to issue motor vehicle safety standards that "shall be practicable, meet the need for motor vehicle safety, and be stated in objective terms."¹⁵⁶ Resultant changes to vehicle design included the aforementioned seatbelt requirement, impact-absorbing steering columns, side-view mirrors, shatter-

¹⁵⁰ Tina Bellon, *U.S. Push for Self-Driving Law Exposes Regulatory Divide*, REUTERS (Sept. 15, 2017 11:25 AM), <https://www.reuters.com/article/us-autos-selfdriving-analysis/u-s-push-for-self-driving-law-exposes-regulatory-divide-idUSKCN1BQ24J>.

¹⁵¹ Pub. L. No. 89-563, § 1, 80 Stat. 718 (codified as amended at 49 U.S.C. §§ 30101–30183 (2018)).

¹⁵² 49 U.S.C. § 30101. *See also* Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 33 (1983) (discussing the NTMVSA).

¹⁵³ *See* Gerhard Peters & John T. Woolley, Univ. of Cal. Santa Barbara, *Remarks at the Signing of the National Traffic and Motor Vehicle Safety Act and the Highway Safety Act*, AM. PRESIDENCY PROJECT, <https://www.presidency.ucsb.edu/documents/remarks-the-signing-the-national-traffic-and-motor-vehicle-safety-act-and-the-highway> (last visited May 23, 2020).

¹⁵⁴ *Id.*

¹⁵⁵ Highway Safety Act of 1966, Pub. L. No. 89-564, Title I, § 101, 80 Stat. 731 (codified as amended at 23 U.S.C. §§ 402–412 (2018)).

¹⁵⁶ 49 U.S.C. § 30111; *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 33.

resistant windshields, and padded dashboards¹⁵⁷—safety features we take for granted now that cars can practically drive themselves to Starbucks, but ones that car manufacturers had not implemented uniformly prior to the NTMVSA.¹⁵⁸

The federal government is able to regulate the design of newly manufactured vehicles because they are sold and transported through interstate commerce.¹⁵⁹ To an extent, the federal government's power to regulate vehicle design confers an indirect power to regulate driver conduct. An illustrative case is *Motor Vehicle Manufacturers Ass'n v. State Farm Mutual Automobile Insurance Co.*, in which the insurance industry fought to prevent federal regulators from rescinding one of their own safety mandates because they were afraid drivers would not wear their seatbelts.¹⁶⁰ In the mid-1970s, the National Highway Traffic Safety Administration ("NHTSA")¹⁶¹ developed a regulation, Modified Standard 208, that required car manufacturers to install either airbags or automatic seatbelts in new cars for model years 1982 and onward.¹⁶² When it issued the mandate in 1977, NHTSA believed almost half of manufacturers (40%) would opt for airbags; by 1981, it realized that automakers instead planned to install automatic seatbelts in more than 99% of new cars.¹⁶³ Citing concerns that (a) the lifesaving potential of airbags would not be realized and (b)

¹⁵⁷ HENRY PETROSKI, *TO FORGIVE DESIGN: UNDERSTANDING FAILURE* 253 (2012).

¹⁵⁸ *See id.*

¹⁵⁹ *See* U.S. CONST. art. I, § 8, cl. 3; *see also* 49 U.S.C. § 30101(1) ("[I]t is necessary to prescribe motor vehicle safety standards for motor vehicles and motor vehicle equipment in interstate commerce . . ."); 49 U.S.C. § 30163(a)(2) ("The Attorney General may bring a civil action . . . to enjoin the sale, offer for sale, or introduction or delivery for introduction, in interstate commerce . . . of a motor vehicle . . .").

¹⁶⁰ *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 39.

¹⁶¹ NHTSA is an agency within the Department of Transportation to which the Secretary of Transportation delegates rulemaking powers.

¹⁶² *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 37. These so-called "passive occupant restraint systems . . . [did] not depend for their effectiveness upon any action taken by the occupant except that necessary to operate the vehicle." *Id.* at 34–35 (internal quotation marks omitted). Automatic seatbelts were symbolic of the way federal regulators tried to exercise police powers by hardwiring them into the vehicles. Despite the Court's favorable description of the automatic belts ("a traditional safety belt, which . . . remains attached without impeding entry or exit from the vehicle"), *id.* at 35, they resulted in years of comically graceless exits from vehicles so equipped.

¹⁶³ *Id.* at 38.

drivers would simply detach the automatic belts instead of wearing them, NHTSA rescinded the passive restraint requirement altogether.¹⁶⁴

The central issue in *Motor Vehicle Manufacturers Ass'n* was whether NHTSA's abandonment of Modified Standard 208 was an arbitrary and capricious decision, not the extent of the agency's power to regulate driver conduct through vehicle design mandates.¹⁶⁵ However, in support of its conclusion that the agency acted arbitrarily and capriciously, the Court discussed, in exhaustive detail, ways that NHTSA could have modified the passive safety requirement to address concerns about seatbelt usage that it should have explored before deciding to scrap the regulation.¹⁶⁶ The opinion does not contemplate legal enforcement of seatbelt usage, but rather modifications to the mandate that would induce drivers to wear their seatbelts, for example, by requiring the automatic belts to be nondetachable.¹⁶⁷ In this way, the Court endorsed the idea that policing driver conduct, in addition to vehicle manufacture, was a proper objective of federal safety regulations.

A more direct means by which Congress can regulate travel is requiring states to enact certain legislation as a condition of receiving federal funding.¹⁶⁸ Congress' enumerated powers include the ability to "lay and collect Taxes, Duties, Imposts, and Excises, to pay the Debts and provide for the common Defence [sic] and general Welfare of the United States."¹⁶⁹ Consistent with this power, "Congress may attach conditions on the receipt of federal funds, and has repeatedly employed the power 'to further broad policy objectives by conditioning receipt of federal moneys upon compliance by the recipient with federal statutory and administrative directives.'"¹⁷⁰ Congress' power to impose legislative requirements upon the states as a condition of receiving federal funds is subject to four limitations.¹⁷¹ First, the

¹⁶⁴ *Id.*

¹⁶⁵ *Id.* at 34.

¹⁶⁶ *Id.* at 46–57.

¹⁶⁷ *Id.* at 55–56.

¹⁶⁸ *See South Dakota v. Dole*, 483 U.S. 203, 206 (1987).

¹⁶⁹ U.S. CONST. art. I, § 8, cl. 1; *see also Dole*, 483 U.S. at 206.

¹⁷⁰ *Dole*, 483 U.S. at 206 (quoting *Fullilove v. Klutznick*, 448 U.S. 448, 474 (1980)).

¹⁷¹ *Nevada v. Skinner*, 884 F.2d 445, 447 (9th Cir. 1989) (collecting cases), *cert. denied*, 493 U.S. 1070 (1990).

exercise of the spending power must be in pursuit of the general welfare.¹⁷² Second, “the conditions on receipt of federal funds must be reasonably related to the articulated goal.”¹⁷³ Third, Congress must authoritatively and unambiguously state its intent to make funds conditional on a particular state action.¹⁷⁴ Fourth, Congress may not use its spending power to force states to engage in activity that itself is unconstitutional.¹⁷⁵

Perhaps the most famous modern example of Congress using its spending power to commandeer the states’ police power is the national speed limit. Enacted to reduce domestic fossil fuel consumption during the Arab Oil Embargo of the early 1970s, the Emergency Highway Energy Conservation Act of 1974 (“EHECA”)¹⁷⁶ required states to impose a maximum speed limit of fifty-five miles per hour on all highways as a condition of receiving federal highway funds.¹⁷⁷ Unlike vehicle safety requirements promulgated by NHTSA and imposed upon car manufacturers, the EHECA imposed limitations on individual drivers (via the states) by making it illegal to drive one’s car beyond a set speed on public roads.

The State of Nevada challenged the national speed limit (which was raised to sixty-five miles per hour on some roads in 1987¹⁷⁸) as an unconstitutional imposition of federal spending power upon the states.¹⁷⁹ The U.S. Court of Appeals for the Ninth Circuit reasoned that the state did not “seriously rely” on any of the four aforementioned spending-power limitations and rejected its argument that the speed limit law was not reasonably related to the “general welfare” given that Congress itself shapes the concept of the general welfare.¹⁸⁰ The court then considered the State of Nevada’s argument that the national speed limit coerced the states into compliance because

¹⁷² *Id.* (citing *Oklahoma v. Civil Service Comm’n*, 330 U.S. 127, 143–44 (1947); *Helvering v. Davis*, 301 U.S. 619, 640 (1937)).

¹⁷³ *Id.* (citing *Dole*, 483 U.S. at 207).

¹⁷⁴ *Id.* (citing *Pennhurst State Sch. & Hosp. v. Halderman*, 451 U.S. 1, 17 (1981)).

¹⁷⁵ *Id.* (citing *Dole*, 483 U.S. at 210).

¹⁷⁶ Pub. L. No. 93-239, § 2, 87 Stat. 1046 (1974).

¹⁷⁷ *Id.* § 2(b)(1), 87 Stat. at 1046; *Skinner*, 884 F.2d at 446.

¹⁷⁸ *Skinner*, 884 F.2d at 451.

¹⁷⁹ *Id.* at 446.

¹⁸⁰ *Id.* at 447 n.3 (citing *Dole*, 483 U.S. at 209).

they would otherwise have to forego federal highway funding.¹⁸¹ The court concluded that the “indistinct coercion limitation” recognized in *Dole* and other cases, which restricts the federal government from conditioning receipt of funds “in such a way as to leave the state with no practical alternative but to comply with federal restrictions,”¹⁸² introduced so many variables in its application that it was largely untenable.¹⁸³

By the Ninth Circuit’s reasoning, if Congress could produce the same result under a separate enumerated power, it was free to do so “through the more gentle commands of the Spending Power”¹⁸⁴ The court determined Congress indeed had independent authority to impose a national speed limit under the Commerce Clause.¹⁸⁵ First, Congress had to be able to articulate a rational basis for the connection between the national speed limit and interstate commerce. In the court’s view, Congress easily met that threshold here: interstate highways “and the feeder roads that serv[ed] them” supported a large portion of the nation’s commerce, so acts “to secure safe and efficient passage over the roads” were well within the bounds of congressional authority.¹⁸⁶ Second, the national speed limit had to be rationally related to achieving the goal of safe, efficient passage over the roads.¹⁸⁷ Despite Nevada’s objection that a lower speed limit would in fact *impede* interstate commerce, the court held Congress was entitled to determine how best to facilitate the safe passage of commerce and that the lower speed limit was a well-reasoned response to fuel shortage concerns created by the Arab Oil Embargo.¹⁸⁸

Finally, the Ninth Circuit disposed of Nevada’s argument that the Tenth Amendment circumscribed Congress’ power to impose a national speed limit under the Commerce Clause. First, the court noted that the “state functions” theory from *National League of Cities v. Usery*,¹⁸⁹ which held that Congress

¹⁸¹ *Id.* at 447–48.

¹⁸² *Id.* at 448; *see also Dole*, 483 U.S. at 211.

¹⁸³ *See Skinner*, 884 F.2d at 448–49.

¹⁸⁴ *Id.* at 449.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 450–51.

¹⁸⁷ *Id.* at 451 (citing *Heart of Atlanta Motel, Inc. v. United States*, 379 U.S. 241, 262 (1964)).

¹⁸⁸ *Id.*

¹⁸⁹ 426 U.S. 833, 852 (1976).

could not legislate against the states in “areas of traditional government functions,” had been overturned.¹⁹⁰ Second, the court reasoned that, even if *Usery* were still good law, the national speed limit did not “infringe upon any integral state function” because control of the highways had long been a joint effort between local, state, and federal authorities and was not solely the province of state government.¹⁹¹ Finally, the court concluded that requiring states to enforce a national speed limit did not represent an overbearing use of “state regulatory machinery for [the federal government’s] own ends” as prohibited by *Federal Energy Regulatory Commission v. Mississippi*.¹⁹² State police already had to enforce speed limits; that the limit now resulted indirectly from a federal law had no impact on the scope or nature of their duties.¹⁹³

Autonomous driving raises unique questions in terms of the proper balance between state and federal regulatory authority.¹⁹⁴ As *Reuters*’ Tina Bellon points out, self-driving cars “[do] not fit neatly into [the] existing regulatory framework” where states regulate the driver and the federal government regulates the car.¹⁹⁵ States began regulating autonomous cars as a natural extension of their authority to regulate driving generally, but in this new equation, the driver—the living, thinking person, whose conduct has always been the subject of the state’s police power—is no longer the object of the

¹⁹⁰ *Skinner*, 884 F.2d at 452 (citing *Garcia v. San Antonio Metro. Transit Auth.*, 469 U.S. 528 (1985)). By *Garcia*’s reasoning, “the principal and basic limit on the federal commerce power is that inherent in all congressional action—the built-in restraints that our system provides through state participation in federal government action.” 468 U.S. at 556. In other words, it was up to Nevada and other states’ congressional representatives to ensure that federal regulations of commerce did not unduly burden the states. Absent an “extraordinary defect” in the national political process, the judiciary would not intervene. *Skinner*, 884 F.2d at 452.

¹⁹¹ *Skinner*, 884 F.2d at 452 (citing *Friends of the Earth v. Carey*, 552 F.2d 25, 38 (2d Cir. 1977)).

¹⁹² 456 U.S. 742 (1982).

¹⁹³ *Skinner*, 884 F.2d at 453. The Ninth Circuit doubted *FERC*’s restriction on federal commandeering of state regulatory machinery was still valid given *Garcia*’s presumption that federal law struck the appropriate balance of power in the eyes of the states. *Skinner*, 884 F.2d at 453. The court included this part of the opinion just in case “pieces” of *FERC* had survived the *Garcia* decision. *Id.* at 453–54.

¹⁹⁴ See Bellon, *supra* note 150.

¹⁹⁵ *Id.*

regulations. With self-driving cars, the “driver” may program his destination, but in all other senses, he is a passenger who relies on the computer at the helm to comply with the laws in the jurisdictions through which the car travels. That computer is part of the vehicle’s manufacture, which falls under the federal government’s purview.

Congress, recognizing this emerging power struggle and its potential to retard autonomous vehicle development in the United States, set out to implement a uniform set of federal regulations to govern self-driving cars.¹⁹⁶ That proposed legislation, called the Safely Ensuring Lives Future Deployment and Research in Vehicle Evolution Act (“SELF DRIVE Act”), was crafted to prevent states from enacting regulations that would pose “an unreasonable restriction on the design, construction, or performance of highly automated vehicles.”¹⁹⁷ After the SELF DRIVE Act passed by unanimous vote in the House of Representatives in 2017, its Senate counterpart, the American Vision for Safer Transportation Through Advancement of Revolutionary Technologies Act (“AV START Act”),¹⁹⁸ died in the Senate at the end of 2018.¹⁹⁹ Congress has since resumed efforts to develop autonomous driving legislation.²⁰⁰ If and when the first set of federal autonomous driving regulations is enacted, the states will be put on notice on how aggressively Congress

¹⁹⁶ *See id.*

¹⁹⁷ Safely Ensuring Lives Future Deployment and Research in Vehicle Evolution Act, H.R. 3388, 115th Cong. (2017).

¹⁹⁸ American Vision for Safer Transportation through Advancement of Revolutionary Technologies Act, S. 1885, 115th Cong. (2017).

¹⁹⁹ Bellon, *supra* note 150.

²⁰⁰ Pete Bigelow, *Congress Is Ready to Try Again on AV Legislation*, AUTOMOTIVE NEWS (Aug. 10, 2019 12:00 AM), <https://www.autonews.com/mobility-report/congress-ready-try-again-av-legislation>; *see also* BILL CANIS, CONG. RESEARCH SERV., R45985, ISSUES IN AUTONOMOUS VEHICLE TESTING AND DEPLOYMENT 1 (2020). As noted in the Congressional Research Service report, for the executive branch’s part,

[t]he U.S. Department of Transportation and NHTSA have issued three reports since 2016 that inform the discussion of federal autonomous vehicle policies, suggesting best practices that states should consider in driver regulation; a set of voluntary, publicly available self-assessments by automakers showing how they are building safety into their vehicles; and a proposal to modify the current system of granting exemptions from federal safety standards.

Id. para. 3.

intends to rebalance the regulatory framework when car and driver are one and the same.

V. The Human Driving Ban Is Inevitable

We established that there exists a fundamental right to interstate travel; that the fundamental right to interstate travel does not protect particular modes of travel; that up to now, American courts have not recognized, and have even flat out rejected, the notion of a fundamental right to drive; and that both state and federal actors may constitutionally regulate the act of driving, either directly through limitations on driver conduct (e.g., speed limits), or indirectly by imposing uniform manufacturing standards that induce driver compliance (e.g., automatic seatbelts). Having laid the groundwork as it relates to driving regulations of past and present, we turn to a more sobering question about the future: how will it all end?

A. Market Forces as a Catalyst for Autonomous Driving

The transition to autonomous driving will be gradual at first, largely independent of any legislative or regulatory action by our elected officials. As with any widely used, mass-market commodity, consumer preferences and technological development are powerful change agents, and the automotive industry is a textbook example. Over the course of a generation, we have watched in-car stereo systems transition from cassette decks, to multi-disc CD changers, to A/V input jacks for our iPods, to USB ports or completely wireless Bluetooth streaming.²⁰¹ The stick-shift—once considered an economical and fuel-efficient alternative to more expensive, slower-shifting automatic transmissions—is disappearing from the new car market because automatics are more convenient, have become

²⁰¹ Model Year 2010 marked the demise of the factory-installed cassette player. Stephen Williams, *For Car Cassette Decks, Play Time Is Over*, N.Y. TIMES (Feb. 4, 2011), <https://www.nytimes.com/2011/02/06/automobiles/06AUDIO.html>. In 2014, 83% of new cars sold in the United States had CD players, but by 2021, that number will drop to about 50%. Jay Ramey, *Autoweek Asks: Should CD Players in Cars Stay or Go?*, AUTOWEEK (July 30, 2018), <https://autoweek.com/article/car-life/autoweek-asks-should-cd-players-cars-stay-or-go>.

less expensive, and are now more fuel efficient than manuals thanks to more complex gearing and faster-shifting electronics.²⁰² Aside from enthusiasts, the driving public has no reason or desire to learn to drive a stick shift, so it behooves car companies to improve manufacturing efficiency and realize accompanying cost savings by dropping manuals from production altogether.²⁰³

The same will be true of human-driven automobiles. Concededly, we remain a way off from set-it-and-forget-it autonomous driving. One of the world's most advanced semi-autonomous production vehicles, the Audi A8 luxury sedan, is capable of Level 3 autonomy,²⁰⁴ but Audi chose not to equip U.S. models with the system due to "an absence of federal legislation, fragmented state laws, and disjointed infrastructure standards."²⁰⁵ However, as advanced automated driving systems become more commonplace, and Americans become more amenable to the idea of having an electronic chauffeur, the number of human-driven cars on the road will inevitably diminish as consumers replace their aging vehicles.²⁰⁶ When it

²⁰² See generally Nathan Bomey, *Audi Kills its Manual-Transmission Cars: How America Lost its Love for the Stick Shift*, USA TODAY (Sept. 7, 2018 9:52 AM), <https://www.usatoday.com/story/money/cars/2018/09/05/stick-shift-manual-transmission/1131578002/>; Eric C. Evarts, *Why Are Manual Transmissions Disappearing?*, U.S. NEWS & WORLD REP. (Sept. 27, 2016), <https://cars.usnews.com/cars-trucks/best-cars-blog/2016/09/why-are-manual-transmissions-disappearing>.

²⁰³ As few as 18% of Americans are estimated to know how to drive a manual transmission, and only 5% of cars were sold with a stick shift as of 2016, compared to 25% of cars in 1987 and 30% of trucks in 1990. Evarts, *supra* note 202.

²⁰⁴ A Level 3 automated driving system "can itself perform all aspects of the driving task under some circumstances. In those circumstances, the human driver must be ready to take back control at any time when the ADS requests the human driver to do so." *Automated Vehicles for Safety*, *supra* note 31.

²⁰⁵ Mike Sutton, *The 2019 Audi A8 Is a Technological Powerhouse with an Asterisk*, CAR & DRIVER (Feb. 27, 2019), <https://www.caranddriver.com/reviews/a26535995/2019-audi-a8-by-the-numbers/>.

²⁰⁶ The average age of cars in operation in the United States—about twelve years old—is at an all-time high. Wolf Richter, *America's Cars and Trucks Are Getting Older*, BUS. INSIDER (Aug. 22, 2018), <https://www.businessinsider.com/americas-cars-and-trucks-are-getting-older-2018-8>. Auto industry analysts used to view this rising metric optimistically as a sign of "pent-up demand" for new cars, but improved reliability means a twelve- or fifteen-year-old car in 2020 is not as prime for replacement as it

reaches the point that autonomous vehicles significantly outnumber human-driven ones, and self-driving technology evolves from a pricey options package to something as commonplace as today's rear-view cameras,²⁰⁷ lawmakers and regulatory authorities will be more inclined to do away with human driving in order to improve safety and eliminate from the highways something as anomalous as a horse-drawn carriage in 2020. Elon Musk, for one, estimated in 2015 that the transition to universal, legally mandated driving autonomy would take about twenty years.²⁰⁸

B. Potential Methods of Implementing a Driving Ban

Either the states or the federal government could introduce a ban on human driving, or the two might work in tandem. Individual state bans on driving would be the approach least disruptive to our existing regulatory framework. As discussed in Part IV, states already impose numerous limitations on our conduct while within the vehicle, related both to its operation and ancillary, distracting activities: we cannot tailgate, we cannot hold our mobile devices, and we need to keep at least one hand on the wheel. Now, we would be required to keep both hands off the wheel and both feet off the pedals. Of course, the temptation to retake control from the vehicle would be significantly reduced if the steering wheel, brake pedal, and throttle were eliminated from the car altogether—a manufacturing requirement that would fall squarely within the purview of federal regulators. Practical considerations make such extreme measures unlikely for the foreseeable future,²⁰⁹

would have been a decade ago. *Id.* Although the used car market continues to chip away at would-be new car sales, *id.*, Americans keeping their cars longer, combined with the growing availability of self-driving aids in more affordable, mass-market vehicles, means that the country may see a wave of a new, autonomous cars on the road when the older ones finally get replaced.

²⁰⁷ The Department of Transportation made rearview cameras mandatory for all new cars effective May 1, 2018, due to their potential to prevent pedestrian fatalities. Standard No. 111; Rear Visibility, 49 CFR § 571.111 S5.5(b) (2014); Nathan Bomey, *Backup Cameras Now Required in New Cars in the U.S.*, USA TODAY (May 2, 2018 3:07 PM), <https://www.usatoday.com/story/money/cars/2018/05/02/backup-cameras/572079002/>.

²⁰⁸ Lowensohn, *supra* note 2.

²⁰⁹ Total elimination of a physical means to maneuver the vehicle would

but in the end, the physical components that enable human driving could be regulated away just as easily as an automatic seatbelt or any other part of the automobile.

If states were the first to ban human driving, proper timing and scope would be essential for such laws to survive a Commerce Clause challenge. A state law that banned driving prematurely—i.e., out of step with driving practice in other states—would disrupt the uniformity that is so essential under the Supreme Court’s Commerce Clause jurisprudence.²¹⁰ Just like Arizona’s restriction on train lengths, the safety benefits of a human driving ban would not outweigh the federal government’s interest in the efficient flow of commerce where: (a) the majority of U.S. states continued to allow human driving; (b) a significant number of people continued to drive; and (c) the inability to drive through a particular state impeded the transportation of persons across state lines.²¹¹ In another scenario, if adoption of autonomous driving technology lagged in the commercial sector but had become near-universal for everyday drivers, a carveout for commercial vehicles would likely remedy any Commerce Clause concerns.

At the federal level, Congress could attempt to unify state law by conditioning the states’ receipt of federal highway funding on banning human driving. Such a requirement would survive the four-part test articulated in *Skinner* because it would be: (1) in pursuit of the general welfare; (2) reasonably related to the articulated goal of eliminating injuries, fatalities, and traffic interruptions on the nation’s highways caused by human driving; (3) unambiguous in its demand that states prohibit driving in order to receive federal funds; and (4) free of any requirement that the states act unconstitutionally.²¹² Additionally, Congress would have independent authority to impose a nationwide driving ban under the Commerce Clause.²¹³ Legislators, mindful of the potential for Tenth Amendment

demand great faith in the fidelity of the vehicle’s electrical systems. Further, quick, short-distance maneuvers—like moving a car from one end of a dealer parking lot to another—might still be more easily performed manually than having to program a “destination” a few hundred feet away. Time will give counsel on those points.

²¹⁰ See *S. Pac. Co. v. Arizona ex rel. Sullivan*, 325 U.S. 761 (1945).

²¹¹ See *id.* at 774; *Edwards v. California*, 314 U.S. 160, 173 (1941).

²¹² See *Nevada v. Skinner*, 884 F.2d 445, 447 (9th Cir. 1989).

²¹³ *Id.* at 449.

lawsuits by the states (however unlikely their success), would likely avoid this approach in favor of the funding route. However, the fact that Congress *could* lawfully impose a nationwide driving ban would undercut any state claims that the funding requirement was coercive; if Congress could impose the ban under the Commerce Clause, it could surely do so “through the more gentle commands of the Spending Power”²¹⁴

C. Unlikelihood of a Judicially Recognized, Fundamental Right to Drive

An assumption underlying this conjecture is that the Supreme Court will not, at some point in the future, recognize driving as a fundamental right. On either a Due Process or Equal Protection challenge, the state and federal laws described above would be subject to the rational basis test because they do not implicate a fundamental right and do not discriminate against any suspect or semi-suspect classification.²¹⁵ While one might have a colorable claim that a human driving ban discriminates against existing drivers, “drivers” are not a suspect or semi-suspect class. Here, the rational basis would be concern for public safety: human error results in injuries and fatalities to drivers, passengers, and pedestrians, and by not allowing people to drive and instead relying on largely infallible computer systems, the public will be safer. In addition, the predominance of autonomous vehicles that could coordinate and anticipate each other’s movements would make rogue, human-driven vehicles further hazardous to the “driving” public. Public safety interests are a broadly accepted basis for the exercise of a

²¹⁴ *Id.* at 448–49.

²¹⁵ “Where a statute neither interferes with a fundamental right nor singles out a suspect classification, substantive due process demands no more than a reasonable fit between a governmental purpose and the means chosen to advance that purpose. . . . In fact, the rational basis test is identical under the two rubrics of equal protection and due process.” 16B AM. JUR. 2D *Constitutional Law* § 965 (2019) (footnotes omitted). Suspect classifications are those based upon “race or national origin, religion, alienage, nonresidency . . . and wealth.” *Id.* § 866. Semi-suspect classifications are those based upon gender or illegitimacy. *Id.* § 867.

state's police powers²¹⁶ and congressional action.²¹⁷

Drivers, realizing their driving privileges are in jeopardy, might urge federal courts to recognize for the first time that driving is a fundamental right. However, the Supreme Court

has always been reluctant to expand the concept of substantive due process [i.e., fundamental rights] because guideposts for responsible decision[-]making in this uncharted area are scarce and open-ended. The doctrine of judicial self-restraint requires [the Court] to exercise the utmost care whenever [it is] asked to break new ground in this field.²¹⁸

The Court's recognition of a fundamental right or liberty requires first that the right be "deeply rooted in this Nation's history and tradition" and "implicit in the concept of ordered liberty, such that neither liberty nor justice would exist if they were sacrificed."²¹⁹ Second, the claimant must provide a "careful description of the asserted fundamental liberty interest."²²⁰

The first requirement invites zealous advocacy for the fundamental right to drive. What could be more American, more deeply embedded in the psyche of this nation's people, than the freedom of the open road? James Hartzell's legendary 1974 ad campaign, "Baseball, Hot Dogs, Apple Pie, and Chevrolet,"²²¹

²¹⁶ *E.g.*, *Sylvia Landfield Trust v. City of L.A.*, 729 F.3d 1189, 1193 (9th Cir. 2013) ("Governmental action is rationally related to a legitimate goal unless the action is clearly arbitrary and unreasonable, having no substantial relation to the public health, safety, morals, or general welfare." (internal quotation marks omitted)).

²¹⁷ *See, e.g.*, *Skinner*, 884 F.2d at 450–51.

²¹⁸ *Collins v. City of Harker Heights*, 503 U.S. 115, 125 (1988) (internal citation omitted). The predominant concern is that "the liberty protected by the Due Process Clause [would] be subtly transformed into the policy preferences of the Members of [the] Court." *Washington v. Glucksberg*, 521 U.S. 702, 720 (1997).

²¹⁹ *Glucksberg*, 521 U.S. at 721 (internal quotation marks and citations omitted).

²²⁰ *Id.* (internal quotation marks and citation omitted).

²²¹ Kiran Aditham, *Creator of 'Best Automobile Commercial Ever Made' Passes Away*, AGENCYSPY (Sept. 15, 2010 3:12 PM), <https://www.adweek.com/agencyspy/creator-of-best-automobile-commercial-ever-made-passes-away/8431>.

succinctly summarizes how “deeply rooted in this Nation’s history and tradition” driving has become, if only for the last century of America’s near-250-year existence. But the second requirement—a clear definition of the right asserted—starts to erode the entire argument. The Court only needs to define fundamental rights when those rights are threatened by government action. Here, that action is a ban on human driving. What, exactly, is “human driving”? Turning the steering wheel, pressing the throttle, and applying the brakes—the physical actions required to control a car. Whatever enjoyment we might derive from the act of driving a car, that physical element is not important to the liberty interest at stake in a world where autonomous cars are a reality. We will still have the freedom to go anywhere we want in our cars; we simply will not be physically responsible for piloting them to our destination. If driving is a fundamental right, the power to choose one’s destination and the sense of personal autonomy inherent in that power are what make it fundamental—not the trivialities of pushing the pedals and turning the steering wheel.

Thus, we are left with two possible alternatives and one practical result. The first alternative is that the Supreme Court will never recognize driving, whether performed by a human being or a computer system, as a fundamental right, consistent with the Ninth Circuit’s holding in *Miller* and other courts that have spoken to the issue. The second alternative is that the Court will recognize “driving,” i.e., the operation of a vehicle, as a fundamental right because so many Americans depend upon driving to exercise other protected freedoms, including the right to interstate travel. However, that right will still not prevent states or the federal government from imposing a ban on the physical act of driving when autonomous vehicles serve the same end—and in a much more equitable fashion. The disabled, the blind, and the elderly are just three demographics who may currently be denied the privilege of driving due to the physical capabilities it requires, and who would realize freedom in an entirely new dimension if the car could do the driving for them. Indeed, when one considers the implications that autonomous cars have for driving (it will be reduced to little more than sitting), it seems all the more unlikely that the Supreme Court will ever recognize a fundamental right to “drive” as we understand that term today. Driving will no longer demand

protection, but rather, the right to *access* a vehicle.

VI. Conclusion

Other constitutional questions remain. Could a driving ban be construed as a government taking, rendering worthless whatever remains of the more than 270 million registered vehicles on the road today²²² that cannot drive themselves? Trying to answer (or even anticipate) all the questions that autonomous driving will present at this nascent stage in its development invites the kind of conjecture that, decades from now, will seem like a futile exercise—much like Francis Houdina’s radio-controlled stunt on the streets of New York City in 1925. It is rather sobering to think that the millions of Americans who still know the love of driving will live to see that passion consigned to a racetrack. However, transportation expert Samuel Schwartz offers an important reminder in his proposal for how American society should navigate the advent of autonomous driving: “We have to put people first. Out of everything I have learned working in the ‘traffic business,’ that is the most crucial lesson.”²²³ When the day comes that driving is more harmful to the general welfare than it is beneficial, it will be wholly consistent with our nation’s understanding of good government to relegate driving to the annals of history. The future is a world without drivers, and the U.S. Constitution will not stand in the way.

²²² *Number of U.S. Aircraft, Vehicles, Vessels, and Other Conveyances*, *supra* note 112 (recording 272,480,899 total registered highway vehicles in 2017).

²²³ SCHWARTZ, *supra* note 1, at 197.